dowed by Mr. Henry W. Sage in Cornell University.

Dr. Franz Hofmeister, professor of pharmacology at Prague, known for his researches in physiological chemistry, has been called to the chair at Strasburg, vacant by the death of the late Prof. Hoppe-Segler.

Prof. F. F. Jerisman has resigned the chair of hygiene in the University of Moscow.

DISCUSSION AND CORRESPONDENCE.

THE LICK REVIEW OF 'MARS.'

Having sought to throw discredit on Mr. Lowell's work, almost before it was begun, some two years ago, the Lick Observatory now renews the attack in Prof. Campbell's review of Mr. Lowell's book. Formerly it decried the work because the theories upon which it was started were too original; now it attempts to seize the credit of the results and calls the theories 'mostly old.' Such a remarkable act of appropriation cannot be allowed to pass unnoticed.

In order to unmask at once the character of the article, we will take first the two points in which the writer sums himself up.

1. Prof. Campbell asserts that of the two leading faults of the book, one is: 'that there should be so many evidences of apparent lack of familiarity with the literature of the subject' on Mr. Lowell's part; and he introduces, quotations at great length from a translation by Prof. W. H. Pickering, of Schiaparelli's work, to which translation he professes his obligation. Of this it is only necessary for us to say that the translation in question was made at the Lowell Observatory, a fact which Prof. Campbell neglects to mention, although the fact was so printed on the paper from which he quotes. We are willing to have the Lick indebted to us for its knowledge of Schiaparelli's work, but it must not suppose us ignorant of our own translation to which its knowledge is due. As the public could not have been expected to know whose the translation was, while we, on the other hand, could not have failed to do so, we are in doubt whether to wonder most at the simplicity or the bare-facedness of such a proceeding.

2. The writer asserts, as the other fault, that the observations were not continued long enough to support the conclusion of seasonal changes on the planet. If he will read again our translation of Schiaparelli he will find that that eminent observer has noticed seasonal changes for years and that what our observations disclosed was not only the fact of changes, which they corroborated, but the character of the changes and the process of their development, thus furnishing an important link in the chain of evidence for Mr. Lowell's theory.

3. With regard to the literature of Mars contributed by the Lick and referred to in the article the succeeding points will show whether that literature was unknown to Mr. Lowell or whether its unimportance made mention of it unnecessary.

4. We will begin with the Lick attempt to claim the discovery of canals in the dark regions for Prof. Schaeberle in 1892, because the latter saw 'streaks' there then. Not only did Prof. W. H. Pickering and Mr. Douglass discover these same 'streaks' at Arequipa, of which fact the writer of the article is apparently ignorant, but Mr. Douglass' discovery, at Flagstaff, in 1894, was not of 'streaks,' but of canals, in the technical sense in which that word is used for Mars; and it is to the detection of these 'canal' peculiarities that the importance of the discovery is due, since it is these peculiarities that impart an artificial appearance to the entire system of canals. The difference between 'streaks' and 'canals' in the dark regions is of exactly the same kind as the difference between the streaks seen in the light areas by Madler, Dawes, Kaiser and others, prior to Schiaparelli's discovery of them as 'canals.'

5. The North Polar Sea was seen by Schiaparelli; the South Polar Sea has been drawn by many previous observers, but not recognized as such. Its limits and the proof of its character are due to Prof. Pickering's polariscope observations at this observatory. Its function in the climatology of Mars was first thoroughly discussed by Mr. Lowell in his book, and this is the precise meaning of his words, 'never distinctly noted or commented on before.'

6. The Lick article asserts that the first irregularity on the terminator was seen at the Lick Observatory, in 1890, but it omits to mention

that it was a casual visitor who detected it, so that to this visitor, and not to the Lick staff, belongs the discovery. What such an outsider's discovery betokens about the efficiency of the staff it is not our purpose to remark. The value of our observations consisted in their great numbers, in the fact that depressions were seen for the first time, in the systematic search made for them all around the planet and in the information they have yielded in regard to its meteorology and topography. Of Prof. Campbell's attempt to criticise the discussion of these observations it is useless to speak, as, owing to his ignorance of the original data, his guesses on the subject are not important.

7. The Lick article asserts that the vegetation theory was suggested by Schiaparelli. If the writer will read, once more, our translation of Schiaparelli he will see that such is not the case, and that not only is Schiaparelli speaking solely of the canals, but that he rejects the mere suggestion of vegetation, nor does he hold it to-day. Nor is this all, for Prof. W. H. Pickering suggested the same theory many years before.

8. The attempt to disparage Mr. Lowell's discovery that the Martian longitudes came to the meridian twenty minutes behind time, by attributing it to Prof. Keeler, will be seen to be an error, by any one who cares to consult the original papers of both.

9. As to any knowledge at the Lick Observatory of a Martian atmosphere, it has been purely negative, Prof. Holden going so far in an article, in the *North American Review* for 1895, entitled 'Mistakes about Mars' as to declare that the opposition of 1894 would be memorable for having proved an absence of atmosphere. We may let Holden's Mistakes about Mars speak for themselves.

We could go on in this manner, but we have shown enough. We should not have noticed an article like the one before us had it not been an attempt on the rights of property, rights at least as sacred in intellectual matters as in those more material ones which the laws protect.

A. E. DOUGLASS,
For the Observatory.

LOWELL OBSERVATORY, FLAGSTAFF, ARIZONA,
August 14, 1896.

COMMERCIAL MICA IN NORTH CAROLINA: THE STORY OF ITS DISCOVERY.

IN an interesting and instructive article on Mica and Mica Mining, published in the *Popular Science Monthly*, for September, 1892 (Vol. XLI., p. 652), C. Hanford Henderson makes the following statement concerning the discovery of commercial mica in North Carolina:

"The location of the mines has been largely accidental. So far as I have been able to learn, the first one opened was the Sinkhole Mine in Mitchell county. The spot was marked by the existence of trenches, many hundred feet long in the aggregate, and in places fully twenty feet deep. Large trees growing on the *débris* indicated that the workings were very ancient. It was supposed that they had been for silver; and when the trenches were re-opened, at the close of the war, the search was for that metal and not for mica. Silver seems to dominate in the Carolinian dream of mineral wealth, when it is, of all such dreams, the one least likely to be realized. The search for silver being unsuccessful, the mines were again abandoned. The mica that had been thrown out was left on the dump, and soon advertised the real character of the mine. A stock driver, passing that way, carried a block of it to Knoxville, where it attracted the attention of men acquainted with its value. They investigated the matter, emigrated at once to Mitchell county and began systematic mining for mica. As the mineral was then selling for from eight to eleven dollars a pound, the rewards were considerable, and much enterprise was shown in the development of the industry."

This statement was also published in the *Engineering and Mining Journal*, for January 7, 1893 (Vol. LV., p. 4), as a part of an abstract of the above paper.

During the summer of 1880, as the assistant of the late Prof. W. C. Kerr, State Geologist of North Carolina, and in the capacity of a special agent of the Tenth Census, I visited the various mica localities of the State, for the purpose of securing statistics and such other information as was deemed necessary in making up his report. While in Bakersville I made careful inquiry concerning the origin of the